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EXAMINER

MAI, HAO D

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3732

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/593,701
Filing Date: September 19, 2006
Appellant(s): Liu et al.

Albert Wai-Kit Chan
For Appellant

EXAMINER'S ANSWER

This is in response to the Appeal Brief filed 10/26/2009 and 11/20/2009 appealing from the Office Action mailed 04/07/2009

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment to the claims after final has been filed. The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

Art Unit: 3732

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 3,533,420	MALONEY	10-1970
US 2005/0217692 A1	CHODOROW ET AL.	10-2005
US 5,184,719	GORDON	2-1993

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 22, 24-27, 31-38, are rejected under 35 U.S.C. 103(a) as being unpatentable over Maloney (3,533,420) in view of Chodorow et al. (2005/0217692 A1).

Regarding claim 22, Maloney discloses a dental hygiene apparatus comprising: an elongated handling means 10 having a longitudinal axis; a teeth-cleaning means 12 comprising arms 22, 24, that secure one or more lengths of interdental material 30, wherein the interdental material is oriented longitudinally as related to the longitudinal axis of the handling means (Figs. 1-4). In a second embodiments of Figures 5-6, Maloney further discloses a flexible means (hinge 64/66) between the teeth-cleaning means and the handling means, wherein the flexible

Art Unit: 3732

means is integral with the teeth-cleaning means and the flexible means 66 is pliable so that the interdental material can be brought laterally to either side of the longitudinal axis of the handling means to have an about 90 degrees angle between the interdental material and the longitudinal axis of the handling means (column 2 lines 64-75).

Maloney discloses the invention substantially as claimed except for the flexible means, the teeth-cleaning means and the handling means are of one construction, i.e. monolithic. Nonetheless, such monolithic flexible means is a very well known flexible mechanism known as a living hinge - a thin flexible hinge made from plastic that joins two rigid plastic parts together, typically manufactured in injection molding operation that creates all three parts at one time as a single part, i.e. monolithic. For example, Chodorow et al. disclose a floss device having such living hinge 22 (Fig. 2) connecting and is monolithic to handle 12 and head 15. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maloney by substituting spring hinge 64/66 with an integrated or monolithic living hinge as taught by Chodorow et al. Such substitution would produce the same and/or predictable results. Furthermore, such substitution would allow for a more cost effective manufacture of the device since less part and/or materials are needed.

As to claims 24-25, and 27, Maloney and Chodorow et al., each by itself or both combined, show the interdental material being dental floss, the elongated handling means comprises various tapered portions at one end, and the teeth-cleaning means is capable of adhering to a new position after flex adjustment at the flexible means (Maloney - column 2 line 74; Chodorow - by hook 25A shown in Fig. 4). As to claims 31-33, and 38, Maloney/Chodorow disclose all the claimed elements as detailed above. As to claims 35, note that the whole handle, including the tapered end, is pliable at hinge 64/66 so that it can be bent about 90 degrees to the right or to the left. As to claim 37, the apparatus as disclosed by

Art Unit: 3732

Maloney/Chodorow is made of plastic which is a thermoplastic resin. As to claims 26, 34, and 36, Maloney does not disclose the chisel-shaped or pointed tapered end portion (claims 26, 34) and the ridges or grooves on the elongated handle (claim 36). Chodorow et al. disclose a dental hygiene apparatus having a chisel-shaped or pointed tapered end 25 and ridges along the handle (Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a chisel-shaped or pointed tapered end at one end of the handle so that the pointed end can be used to scrape out hard plaque on the teeth as explicitly taught by Chodorow et al. Furthermore, it would also have been obvious to one having ordinary skill in the art at the time the invention was made to include ridges and/or grooves on the elongated handle in order to establish an easy and secure grip of the handle, preventing slippage of the apparatus from the user's grasp.

Claims 28-30 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maloney in view of Chodorow et al., and further in view of Gordon (5,184,719).

Maloney/Chodorow disclose the invention substantially as claimed. However, Maloney/Chodorow fail to disclose a guarding means for preventing a user from using said apparatus. Gordon discloses a dental hygiene apparatus having a guarding means (package 21) capable of preventing a user from using the teeth-cleaning means/toothbrush 12 (Fig. 1). Package 21 comprises a locking device (the perimeter seal) that fits into a mating recess on the teeth-cleaning means; note the mating recess being the tapering recessed neck part of toothbrush head 12 where package's perimeter seal wraps around (Fig. 1). The guarding means/package 21 comprise a thin material that securely covers the teeth-cleaning means 12 and cannot be removed without destruction of said material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include such package as a

Art Unit: 3732

guarding means to Maloney in order to prevent tampering and maintain the device clean and free of contamination prior to usage.

(10) Response to Argument

Appellant argues that both Maloney and Chodorow each by itself or in combination do not disclose a flexible means (claim 22) and a flexible elbow (claim 31) that would allow 90-degree lateral movement to either side of the handling means as claimed. The examiner notes that the claim language “...so that the interdental material can be brought laterally to either side of the longitudinal axis of the handling means to have an about 90 degrees angle between the interdental material and the longitudinal axis of the handling means/handle” (claim 22 lines 9-12; claim 31 lines 9-12) is **functional** language and does not convey positive structural limitations. It has been held that “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Furthermore, if a prior art structure is capable of performing the claimed intended use, then it meets the claim. See, e.g., *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). In this case, the examiner maintains that Maloney in view of Chodorow disclose all the structural limitations as claimed; furthermore, Maloney’s hinge 64/66 (Figs. 5-6) and Chodorow’s living hinge 22 (Fig. 2) each is **capable** of allowing the interdental material be brought laterally to either side of the longitudinal axis of the handling means to an angle of about 90 degrees as claimed.

Regarding Maloney, Appellant argues that Maloney fails to disclose a flexible means that would allow a 90-degree movement. The examiner maintains that Maloney’s hinge 64/66 (Figures 5-6) is equivalent to the claimed “flexible means” that is pliable and is **capable** of

Art Unit: 3732

allowing the interdental material be brought laterally to either side of the longitudinal axis of the handling means to an angle of about 90 degrees as claimed. One skill in the art would determine that such 90-degree movement of hinge 64/66 is possible if enough reasonable force is applied.

Regarding Chodorow, Appellant argues that Chodorow fails to disclose a flexible means that would allow (i) 90-degree movement and (ii) to either side of the handling means. The examiner maintains that Chodorow's living hinge 22, which is a thin portion of injection molded plastic (Fig. 2; paragraph 58) is equivalent to the flexible means that is pliable as claimed. Firstly, regarding the 90-degree movement, note that Chodorow explicitly teaches the living hinge 22 allowing the device's head to be bent to an angle in a range of 10-100 degrees relative to the handle (Fig. 5; page 5 claim 15). Such range of 10-100 degrees anticipates Appellant's claimed range of "about 90 degrees". Secondly, regarding the either side movement, Appellant argues that Chodorow only permits movement to one, not both, side of the handling means because of the projecting latch the handle to lock the device's head in a bent orientation. The examiner maintains that one skill in the art would determine that such living hinge 22 as disclosed by Chodorow is **capable** of bending to either side regardless of the latch on the handle. In another word, the locking latch on the handle does not hinder the living hinge 22's capability of bending to either side of the handle. The head may not be capable of locking if bent on the side without the latch, but it certainly is capable of bending to either side via living hinge 22.

In conclusion, there are no deficiencies found in view of the rejections and arguments stated above.

Art Unit: 3732

(11) Related Proceeding(s) Appendix

None

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

**/Hao D Mai/
Examiner, Art Unit 3732**

Conferees:

**/Cris L. Rodriguez/
Supervisory Patent Examiner, Art Unit 3732**

**/Greg Vidovich/
TQAS, TC 3700**